

REEL # 2
ANDRIANOVA, L.V.

USSR

UDC 666.11.01:620.193.42

ANDRIANOVA, L. V., Candidate of Sciences, MOLCHANOV, V. S.

"Alkali Resistance of Phosphate and Borate Glasses and Alkali Washing of Glass Items"

Leningrad, Optiko-mekhanicheskaya promyshlennost' No 11, Nov 71, pp 38-41

Abstract: The alkali resistance of non-silicate optical phosphate and borate glasses for industrial use are determined. The alkali resistance was characterized by layer thickness δ , dissolved during four hours in 0.5 normal solution of caustic soda (solution volume 0.6 to 0.8 l) at 90°C, calculated by formula $\delta = \Delta P / S \cdot d$ where δ is the layer thickness, ΔP is the weight decrement of a plate, S is the plate surface, and d is the glass density. The latter was determined by the method of hydrostatic weighing. Results are presented in a table containing also data on certain silicate glasses obtained by the same method. It is shown that alkali washing is tolerated only for such glasses, from which a layer not more than 3-4 micrometer thick is scoured during four hours in a 0.5 normal solution of NaOH at 90°C.

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UDC 615.285.7.017:615.277.4

ANDRIANOVA, M. M., and ALEKSYEV, I. V., Laboratory of Carcinogens, Institute of Nutrition, Academy of Medical Sciences USSR, Moscow

"Carcinogenic Properties of the Pesticides Sevin, Maneb, Ziram, and Zineb"

Moscow, Voprosy Pitaniya, No 6, 1970, pp 71-74

Abstract: Nonpurebred rats were fed seven (30 mg/kg), maneb (335 mg/kg), ziram (70 mg/kg), or zineb (285 mg/kg). Other rats received subcutaneous implants of the pesticides (20 mg of sevin, 12.5 mg of maneb, 15 mg of ziram, or 20 mg of zineb). Among the animals still alive after 22 months, malignant tumors were found in 6 of 22 that received sevin (4 orally and 2 subcutaneously), 5 of 10 that received maneb (2 orally and 3 subcutaneously), 7 of 20 that received ziram (4 orally and 3 subcutaneously), and 6 of 16 that received zineb (2 orally and 4 subcutaneously). Only 1 of the surviving 46 control rats developed a tumor. The pesticides evidently possess systemic action, for the tumors appeared in a variety of organs (but never at the injection site).

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UDC (539.551+531.424):(546.24+546.683-143)

ANDRIANOVA, T. N., ALEKSANDROZ, A. A., OKHOMIN, V. S., RAZUMEYCHENKO, L. A.,
PANINA, Z. I.

"Viscosity and Density of Melts in the Thallium-Tellurium System"

Teplofizika Vysokikh Temperatur, Vol 9, No 5, 1971, pp 934-937.

Abstract: Results are presented from studies of the viscosity and density of melts in the thallium-tellurium system in the concentration interval from 32 at.% Te to 100% Te and in the temperature interval from the melting point to 1,300°K. Analysis of the isotherms of the properties studied shows the existence in the liquid phase of the stable compound Tl_2Te , which does not dissociate over a broad temperature range. An analysis is presented of structural changes in melts of the concentrations studied.

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USSR

UDC 621.362.2

ANDRIANOVA, T. N., ALEKSANDROV, A. A., OKHOTIN, V. S., PANINA, Z. I.,
~~RUZOV, P. A.~~

"Investigation of Semiconductor Systems Based on Sb_2Se_3 in the Molten State"

Tr. Mosk. energ. in-ta (Works of the Moscow Power Engineering Institute),
1970, vyp. 75, pp 192-196 (from RZh-Elektrotehnika i Energetika, No 1,
Jan 71, Abstract No 1A159)

Translation: An investigation is made of the effect of various elements on the structure of antimony selenide in the molten state. The kinematic viscosity and density of melts of Sb, Se, Zn, Cu, Ga, In, Te and Sn in antimony selenide were measured. The change in structure of melts of 80 at.% Sb_2Se_3 + 20 at.% Ga and 80 at.% Sb_2Se_3 + 20 at.% Sn takes place over a narrow temperature interval of $\Delta t \approx 50^\circ K$, while the structure of a melt of 80 at.% Sb_2Se_3 + 20 at.% In varies continuously over the entire temperature interval from 950 to $1300^\circ K$. Two illustrations, bibliography of two titles. A. Kh. Cherkasskiy.

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ANDRIYAKHIN, V.M.

JPRS 60244

10 October 1973

NUCLEAR PUMPING IN MOLECULAR GAS LASERS

Article by V. M. Andriyakhin, V. V. Vasil'tsov, S. S. Kravtsov, and V. D. Pletenkov of the Institute of Nuclear Physics of Moscow State University named M. V. Lomonosov, Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Russian, Vol 63, No 5 (11), 1972, submitted 13 June 1972, pp 1633-1644

The mechanism of the populating of vibrational levels of molecules by electrons produced during the ionization of a gas by the products of nuclear reactions or by a beam of charged particles is examined. It is demonstrated, that the mode, which contains the lowest excited level of a molecule, is highly populated by a diffuse stream of electrons, arising in the energy space due to the large negative gradient in the distribution of electrons by energies at the excitation threshold of this level. Criteria for accomplishing population inversion during nuclear pumping are established and it is shown, that mixtures based on CO_2 do not satisfy these criteria.

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UDC 532.595.2

ANDRIYANKIN, E. I., BOBOLEV, V. K., DUBOVIK, A. V., Moscow

"Collapse of an Elliptical Cavity and Excitation of an Explosion in a Layer of Liquid by an Impact"

Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 5, 1971, pp 78-85.

ABSTRACT: Experiments have shown that an initially circular bubble is slightly displaced or converted to an elliptical bubble during the process of collapse, further compression of which causes the appearance of cumulative streams. This process is of interest for the study of the wear of surfaces in a cavitating stream and in the analysis of the sensitivity of liquid explosives to impacts. The development of cumulation can be conveniently studied by making the cavity elliptical in advance or by displacing a circular cavity relative to the axis of impact, thus creating a pressure field asymmetrical relative to its center. This work presents some theoretical considerations on the nature of the cumulative stream which develops in an elliptical or displaced cavity and its influence on the excitation of explosion of liquid explosives due to the formation of small drops in the adiabatically heated gas within the cavity. The experimental data on the time of formation of streams and the frequency of explosions of nitroglycerin qualitatively confirm the theoretical statements.

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USSR

LOVTSOV, V. V., RIVKIN, L. A., POTEKHIN, B. I., ANDRIYANOV, A. M.

"New Air Distributors with Twisted Supply Streams"

Naladka i Proyektir. Sistem Prom. Ventilyatsii i Konditsionir. Vozdukha [Adjustment and Planning of Commercial Ventilation and Air Conditioning Systems -- Collection of Works], Moscow, 1971, pp. 10-21, (Translated from Referativnyy Zhurnal, Mekhanika, No 4, 1972; Abstract No 4 B309 by A. S. Malyutin).

Translation: New air distributors have been created, distinguished by great damping of relative velocities and temperatures, as well as simplicity of design: an input pipe, a wall ejection air distributor, a floor ejection air distributor. Comparative are presented on the air distributors with similar devices created earlier, showing that when the new air distributors are used, the quantitative loads can be increased and the working temperature difference can be up to 50°. The air distributors suggested allow the quantity of supply air to be changed between 10 and 150% of the nominal quantity without reducing the quality of air distribution.

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- 109 -

AN0033650

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UR 9054

AUTHORS-- ZARZHEVSKIY, I., ENGINEER WITH THE CHELYABINSK TRACTOR PLANT, STEPANOV, V., FORMER PARTY ORGANIZER OF THE PLANT, DIRECTOR OF THE PLANT MUSEUM, AND ANDRIYANOV, V. CORRESPONDENT

TITLE-- TANKOGRAD /CITY OF TANKS/

NEWSPAPER-- KOMSOMOL, SKAYA PRAVDA, MARCH 27, 1970, P 2

ABSTRACT-- THE ROLE OF THE CHELYABINSK TRACTOR PLANT /CHTZ/ AND THE MAGNITOGORSK METALLURGICAL COMPLEX /MMK/, AS ARMS SUPPLIERS DURING THE SECOND WORLD WAR, IS REVIEWED. THE ARTICLE IS BASED ON THE FOLLOWING PUBLICATIONS-- "URAL YUZHNY" BY L. NIKULIN, 1943 - "PATRIOTKI", CHELYABGIZ, 1941 - "TRUDOVY PODVIG SOVETSKIKH TANKOSTROITELEY", 1946 - SBORNIK "CHELYABINSK", 1967 - MANUSCRIPT "THE HISTORY OF THE CHELYABINSK TRACTOR PLANT."

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19710220

AN0033650

THE NAMES OF THE FOLLOWING TANK DESIGNERS ARE MENTIONED--
ZH. YA. KOTIN, A. A. MOROZOV, N. L. DUKHOV, A. S. YERMOLAYEV,
M. N. SHCHUKIN, N. D. ASTROV, I. YA. TRASHUTIN, AND LEV TROYANOV.
G. NOSOV, DIRECTOR OF THE MMK, AND V. MALYSHEV, COMMISSAR OF THE
TANK INDUSTRY ARE ALSO MENTIONED. ONCE IN THE ARTICLE THE CHTZ IS
REFERRED TO AS PLANT NO. 169. THE ARTICLE CLAIMS THAT HALF OF
ALL T-34 TANKS WERE MADE OF THE STEEL PRODUCED BY THE MMK AS WELL AS
EVERY THIRD ARTILLERY MISSILE.

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AA0040648

Andriyanov, V.A.

UR 0482

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Soviet Inventions Illustrated, Section I Chemical, Derwent,

242857 IMPROVED SEAL for the door of a chamber,
e.g. for drawing of semiconductor single
crystals from a melt. The door, free to move in
the direction perpendicular to its surface is
controlled and aligned by pins passing through the
door; the clamping screws are located in threaded
holes in the hinge clamps securing the door
perimeter, and the door is sealed by turning a
handle held by these screws.

10.2.68 as 1221430/22-1. V.YU.ZHVIRBYANSKII et al.
STATE SCI.RES. & DES. INST. OF THE RARE-METAL IND.
(25.9.69) Bul 16/5.5.69. Class 12g. Int.Cl.B.01j.

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19750228

AA0040648

AUTHORS: Zhvirblyanskiy, V. Yu.; Andriyanov, V. A.; and
Belov, Yu. S.

Gosudarstvennyy Nauchno - Issledovatel'skiy i Proyektno -
Konstruktorskiy Institut Redkometallicheskooy Promyshlennosti

19750229

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1/2 025 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--A GENERAL PURPOSE MULTIBALL BURNISHER -U-
AUTHOR--(03)-ANDRIYASIN, V.A., CHEPA, P.A., SHEYKO, I.I.
COUNTRY OF INFO--USSR *A*
SOURCE--MOSCOW, STANKI I INSTRUMENT, NO 2, 1970, PP 30-31
DATE PUBLISHED--70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--HYDRAULIC EQUIPMENT, SURFACE PROPERTY, METAL POLISHING,
PLASTIC DEFORMATION, METAL WORKING MACHINE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/1776 STEP NO--UR/0121/70/000/002/0030/0031
CIRC ACCESSION NO--AP0114275
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--09OCT79

CIRC ACCESSION NO--AP0114275

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR FINISHING WORKS ON PARTS OF LOW RIGIDITY (SUCH AS COUPLING RODS FOR HYDRAULIC CYLINDERS) BY THE METHOD OF SURFACE PLASTIC DEFORMATION, THE SCIENTIFIC RESEARCH INSTITUTE OF MACHINERY MANUFACTURE AND METAL WORKING (MINSK) HAS DEVELOPED A GENERAL PURPOSE MULTIBALL BURNISHER, A DISTINCTIVE FEATURE OF WHICH IS THE POSSIBILITY OF READJUSTMENT FOR PROCESSING PARTS WITH A DIAMETER FROM 10--32 MM VIA THE PLACING OF BALLS OF APPROPRIATE DIMENSIONS. A DESCRIPTION OF THE MACHINE IS GIVEN, AND ITS OPERATION IS DESCRIBED. SUCH BURNISHERS ARE RECOMMENDED FOR FINISHING WORK ON PARTS OF VARIOUS SIZES WITH A REQUIRED SURFACE CLEANNESS OF CLASS 9-10.

UNCLASSIFIED

USSR

UDC: 629.78.017.2

ANDRIYENKO, A. Ya.

"Statistical Synthesis of Optimum Pulse-Type Control Systems for Space Vehicles With Regard to Limitations on the Structure of the System"

Moscow, Upr. dvizhushchimisya ob'yektami. Tr. IV Vses. soveshch. po avtomat. upr. Tbilisi, 1968--sbornik (Control of Moving Objects. Works of the Fourth All-Union Conference on Automatic Control. Tbilisi, 1968--collection of papers), 1972, pp 242-256 (from RZh-Raketostroyeniye, No 10, Oct 72, abstract No 10.41.54)

Translation: Statistical methods are proposed for synthesizing pulse systems with regard to the following restrictions: on the storage capacity of the controlling device; on the number of devices which reproduce coefficients of the algorithm of operation of the controlling device; on the type of operations which can be realized in the controlling device. These methods are outlined as applied to terminal control systems. The restriction on storage capacity is achieved by limiting the volume of information which is processed in the controlling device as the controlling signal is formed. The problem of synthesis is solved on the basis of the theory of statistical

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ANDRIYENKO, A. Ya., Upr. dvizhushchimisya ob'yektami. Tr. IV Vses. soveshch. po avtomat. upr. Tbilisi, 1968--sbornik, 1972, pp 242-256

solutions and dynamic programming. Restrictions of the second type may be approximately accounted for by optimizing the time-sequencing program for intervals of quantization of the pulse system. In synthesizing systems with restrictions of the third type it is assumed that only algebraic operations can be realized in the controlling device. Synthesis is done by using an experimental method of statistical linearization on a digital computer for the case of a limited number of realizations of control processes. Bibliography of four titles. Résumé.

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ANDRIYENKO, A. Ya.

Spacecraft
System

Spacecraft
Systems

So: JPAS 56134

31 MAR 1972

EVALUATING THE PRECISION OF SPACECRAFT CONTROL SYSTEMS

[Article by B. N. Petrov, A. Ya. Andriyenko, Yu. Y. Portnov-Sokolov, Moscow, Doklady Akademii Nauk SSSR, 1971, pp 562-570]

The automatic control systems of spacecraft and their power plants are, as a rule, complex nonlinear systems. They are subject to the action of many external and parametric perturbations applied to various inputs. These perturbations are largely of random character, and evaluation of the precision of systems requires the use of statistical methods. As a rule the use of statistical methods in engineering calculations requires a large volume of statistical synthesis. In determining the sensitivity of systems to change in their parameters, it becomes necessary to resort to repeated calculations of statistical precision, which increases the already enormous laboriousness of the calculations.

Rigorous solution of the problem of statistical analysis of systems, with the exception of those that reduce to linear systems [1], is possible only in special cases.

Thus, for instance, the problem of analyzing a class of systems perturbed by ordinary differential equations in the assumption that when the order of the equations is high this method is practically useless because of the extremely large volume of calculations.

Many works have been published on approximate methods of evaluating the statistical precision of nonlinear control systems. The bibliography of these works is widely known. Of these works we cite [3, 4].

A large volume of work has been done on methods of statistical linearization [5, 6], and in many cases this method is convenient in number of nonlinearities described by high-order equations with a large statistical linearization method increases sharply, and this diminishes their practical value.

USSR

UDC 621.224-233.2.001.24

ANDRIYENKO, B.K., Engineer

"Study and Design of Hydraulic Turbine Guide Bearings With Rubber Metal Bushings and Water Lubrication"

Leningrad, Energo-Mashinostroyeniye, No 4, Apr 71, pp 19-21

Abstract: A series of laboratory investigations on guide bearings with rubber-metal bushings carried out with the purpose of determining the nature of friction, is reported. Tests were conducted on a horizontal stand with shafts 250 mm in diameter, with characteristics approaching the existing installations. Samples of bushings with pasted sheet rubber with average MB-B-C hardness (GOST 7338-65) and mechanical properties close to TY 3199-52 rubber used in turbine bearings were tested. The experimental data on friction dependence on specific pressure $f = (p)$ for 4.10 and 15 m/sec slip velocity presented in a graph show that the friction coefficient first increases passes through a maximum (0.0107-0.0115) then decreases, and that rubber bushings obey all the principles of friction theory and differ from hard oil bearings by increased pliability and low viscosity of water. A method for the design of rubber bearings developed on the basis of these results, together with data from operations of various hydroelectric stations, makes it possible to select the height dimensions of bearings in accordance with calculated values of radial load and admissible specific pressures.

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1/2 032 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--VOLT AMPERE CHARACTERISTICS OF A GLASSY SEMICONDUCTOR, TIASSE SUB2,
AT HIGH VOLTAGES -U-
AUTHOR--ANDRIYESH, A.M., KROITORU, N. *A*
COUNTRY OF INFO--USSR
SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(3), 563-5
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--SOLID STATE PHYSICS, SEMICONDUCTOR DEVICE, VOLT AMPERE
CHARACTERISTIC
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY PEEL/FRAE--1988/0250 STEP NO--UR/0449/70/004/003/0563/0565
CIRC ACCESSION NO--AP0105324
UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0105324

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CURRENT VOLTAGE CHARACTERISTICS OF 20-100 MU THICK FLASSE SUB2 LAYERS SHOWED TYPICAL SPACE CHARGE LIMITED CURRENT BEHAVIOR WITH A SINGLE SHALLOW TRAPPING LEVEL. THE DRIFT MOBILITY AT ROOM TEMP. WAS 5 TIMES 10 PRIME NEGATIVE3 CM PRIME2-V SEC AND THE DEPTH OF THE TRAP WAS 0.25 EV.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--13 SEP70
TITLE--ENERGY SPECTRUM OF VITREOUS ARSENIC SULFIDE -U-
AUTHOR--KOLOMIYETS, B.T., MAZETS, T.F., EFENDTYEV, SH.M., ANDRIYESH, A.M.
COUNTRY OF INFO--USSR A
SOURCE--J. NON. CRYST. SOLIDS 1970, 4(1), 45-56
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--ABSORPTION SPECTRUM, ARSENIC SULFIDE, VOLT AMPERE
CHARACTERISTIC, ENERGY SPECTRUM, PHOTOCONDUCTIVITY, SEMICONDUCTOR FILM,
FORBIDDEN BAND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1990/0386 STEP NO--NE/0000/70/004/001/0045/0056
CIRC ACCESSION NO--AT0108680
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PROCESSING DATE--11 SEP 70

CIRC ACCESSION NO--AT0108680

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A BRIEF REVIEW OF AN EXPTL. STUDY OF REFLECTIVITY, ABSORPTION AND PHOTOCOND. SPECTRA, AND CURRENT VOLTAGE CHARACTERISTICS OF VITREOUS AS SULFIDE IS PRESENTED. THE ABSORPTION SPECTRA WERE OBTAINED IN THE HIGH ABSORPTION RANGE UP TO K EQUALS 10 PRIMES CM PRIME NEGATIVE1. THE VALUE OF THE FORBIDDEN BAND E_{SUBG} OF VITREOUS AS SUB2 S SUB3 OBTAINED FROM THE OPTICAL DATA IS 2.4 EV. THE ABSORPTION EDGE AT ENERGIES E IS LESS THAN E_{SUBG} HAS AN EXPONENTIAL CHARACTER DUE TO LOCALIZED STATES NEAR THE ALLOWED BAND EDGES. IN AN ELEC. FIELD THE EXPONENTIAL ABSORPTION EDGE SHIFTS TO A LOWER ENERGY RANGE OBEYING FRANZ' THEORY. FROM A STUDY OF THE PHOTOCOND. SPECTRA AND CURRENT VOLTAGE CHARACTERISTICS IN THE NONLINEAR RANGE, SOME CONCLUSIONS CAN BE MADE CONCERNING THE ENERGY DISTRIBUTION OF THE LOCALIZED STATES IN THE FORBIDDEN BAND OF THE AMORPHOUS AS SULFIDE FILMS.

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UNCLASSIFIED

UDC 616.981.42-07

USSR

ANDRIYESH, L. P., Curriculum of Epidemiology, Kishinev Medical Institute

"Utilization of the Immunofluorescent Method in the Diagnosis of Brucellosis"

Kishinev, Zdravookhraneniye, No 3, May/Jun 70, pp 7-8

Abstract: The objective of this study was to investigate the sensitivity of the immunofluorescent method for detection of antibodies in the serum of persons recovering from brucellosis or exposed to the disease. The following reagents were used to prepare microscope slides: a very dilute antigen solution, variously diluted serum samples, and rabbit luminescent antiserum against human gamma-globulins. The slides were examined in the ML-2 microscope under nonfluorescent oil. The series included 61 serum samples from people suffering from brucellosis in 1948-1950 (group I); 101 samples from persons exposed to the disease (group II); and 45 samples from healthy persons (control group). While there was not a single case of the specific Brucella fluorescence in the control group, a definite fluorescence (evaluated as 3 plus and 4 plus) was observed in 29 serum samples of the first and second groups. Simultaneous examination of all samples by the Huddleson reaction and the agglutination test yielded negative results in all cases. The antibodies detected were probably incomplete antibodies. It was concluded that the immunofluorescent method is specific, sensitive, and suitable for retrospective diagnosis of brucellosis in humans.

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USSR

ANDRIYEVSKAYA, S. V., DARKHOVSKIY, B. S. and ZHIVOV, N. P.

"The Problem of Testing Deviations in Production Processes"

Inform. Metody v Sistemakh Upr. Izmereniy i Kontrolya. T. 1 [Information Methods in Control, Measurement and Testing Systems, Vol 1 -- Collection of Works], Vladivostok, 1972, pp 417-424 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V807).

Translation: The following problem is studied. The input vector u acts on initial system S in which it is converted to output vector y . System S itself is not subject to any deviations. Operator F , at the input of which vector u , y and external factor z , independent of u and y act, forms deviation R according to some rule. Deviation R acts on system S , changing its characteristics in the broad sense of this word. It is necessary, by observing vector y and knowing certain a priori information concerning u , z and operator F , to find deviation R as rapidly as possible.

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USSR

ANDRIYEVSKAYA, V. V.

"Study of the Process of Solution of Verbal Semantic Problems"

Lingvist. Probl. Avtomatiz. Inform. Poiska [Linguistic Problems of the Automation of Information Retrieval -- Collection of Works], Kiev, 1972, pp 91-101 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V829).

Translation: A speech process is analyzed as verbal modeling of a certain content and an attempt is made to establish how the selection of words in aural speech depends on the understanding of the sense of the speech. Data from the experiments are presented. Ye. Burgina

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ANO 013069

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AUTHOR--

ANDRIYEVSKIY, M., CANDIDATE OF TECHNICAL SCIENCES,
HEAD OF THE CENTRAL ENGINEERING-DESIGN BUREAU OF THE
MINISTRY OF THE RIVER FLEET /CEB/

TITLE--

FROM BLUE PRINTS ONTO WATER

NEWSPAPER--

VODNYY TRANSPORT, JANUARY 20, 1970, P 2, COLS 1-7

ABSTRACT--

THE CEB HAS DEVELOPED NEW TYPES OF PASSENGER RIVER
SHIPS, THE "MOSKVA-1" AND THE "NEVA-1", AND ALSO A WATER JET-PROPELLED
TYPE OF A SHIP, THE "ZARYA". THE "ZARYA" CAN CARRY 60 PASSENGERS
AT SPEEDS UP TO 40 KILOMETERS PER HOUR IN WATERS AT LEAST 80 CM DEEP.

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CURRENTLY THE CEB IS BUSY WITH THE BLUEPRINTS FOR A 150-PASSENGER CATAMARAN SHIP CAPABLE OF SPEEDS CLOSE TO 45 KM PER HOUR.

THE CEB IS ALSO WORKING ON A 2,150-TON MOTOR SHIP AND A 2,150-TON TANKER FOR THE LENA STEAMSHIP LINE. THESE SHIPS WILL BE ABLE TO PLY IN COASTAL WATERS. THE CONSTRUCTION OF THE TANKER HAS BEEN STARTED AT THE OSETROVSKAYA SHIPYARD.

THE CEB COLLABORATES WITH THE GOR. KIY INSTITUTE FOR WATER TRANSPORT ENGINEERS, PARTICULARLY WITH PROFESSOR M. YA. ALFER, YEV, AN EXPERT ON THE CATAMARAN TYPE OF SHIPS.

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UDC 539.37.376

ANDRIYEVSKIY, R. A., SPIVAK, I. I., and KLIMENKO, V. V.

"Manifestation of Superplasticity in Refractory Compounds"

Moscow, Doklady Akademii Nauk SSSR, Vol 203, No 6, 1972, pp 1279-1281

Abstract: The authors studied the possibility of the manifestation of superplasticity in two-phase composites based on refractory compounds. The systems VC-ZrC, VC-HfC and TiC-ZrC were selected for this purpose. Specimens were prepared by hot forming with subsequent annealing at 2500° C; porosity of the VC-ZrC, VC-HfC, TiC-ZrC composites was respectively 1.5-3, 8-15, 4-6 percent; the testing procedure consisted in studying bend creep. The results indicate that many of the regularities found in studying the superplasticity of metallic alloys (nonlinear relation between creep rate and σ , the manifestation of superplasticity in two-phase alloys whose phase volumes are equidimensional, and the size of inclusions amounting to several microns) are also observed in the case of carbide composites.

The authors thank K. L. CHEVASHEVA for her help in the work.

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USSR

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SHEVCHENKO, A. S., ANDRIYEVSKY, R. A., KALININ, V. P., and LUTIKOV, R. A.,
Moscow

"Study of the X-Ray and Pycnometric Density of Interstitial Phases on a Zirconium Base"

Kiev, Academy of Sciences Ukr SSR, Poroshkovaya Metallurgiya, No 1, Jan 70, pp 89-91

Abstract: The results of an investigation of the X-ray (γ_r) and pycnometric (γ_p) density of nitrides, carbides, hydrides, and carbo- and nitrohydrides of zirconium in a homogeneous field are presented. The density was measured on a vacuum pycnometer using ethyl alcohol. The measurement error was about 0.5%, and the scattering of experimental data on γ_p not more than $\pm 0.02 \text{ g/cm}^3$. Electrolytic zirconium powder was used as the primary material. It was saturated with high purity nitrogen at 1300-1800°C for the production of nitrides. The hydrogen saturation was accomplished at 700-900°C, and the carbides were produced by a two-step synthesis of zirconium powder with graphite of spectral purity in a 10^{-6} mm mercury column vacuum at 1700-2000°C with intermediate pulverization.

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USSR

SHEVCHENKO, A. S., et al, Poroshkovaya Metallurgiya, No 1, Jan 70, pp 89-91

The ternary compounds were synthesized from Zr - ZrN and Zr - ZrC mixtures in a hydrogen medium at 900-1000°C. The variation in lattice parameters with the composition of the zirconium carbides and nitrides is presented in a table. On the basis of the results obtained it can be assumed that the defects of carbides, hydrides, and carbo- and nitrohydrides result from the incompleteness of the nonmetallic sublattice. In zirconium nitrides with a high content of nonmetallic impurities, the discrepancy between γ_r and γ_p may be due to the defect of the metallic sublattice, which disappears with increased material purity. Orig. art. has: 1 table and 13 references.

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AN0025930

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UR9015

AUTHORS-- TIMOFEYEV, B., CORRESPONDING MEMBER OF THE UKRAINIAN
ACADEMY OF SCIENCES, DIRECTOR, INSTITUTE OF AUTOMA-
TICS, AND ANDRIYEVSKIY, S., CHIEF ENGINEER OF THE
INSTITUTE

TITLE-- THE MACHINE THAT READS

NEWSPAPER-- RABOCHAYA GAZETA, FEBRUARY 24, 1970, P 3, COLS 7-8

ABSTRACT-- THE CHAIR OF ENGINEERING ELECTRONICS OF THE KIEV
POLYTECHNIC INSTITUTE IS ONE OF THE CENTERS WHERE RESEARCH IS BEING
CONDUCTED IN THE AUTOMATED PROCESSING OF GRAPHIC INFORMATION. THE
TEAM WHICH IS INVOLVED IN THIS WORK IS HEADED BY DOCTORS OF TECHNICAL
SCIENCES V. P. SIGORSKIY AND A. I. PETRENKO. ASSOCIATES OF THE
CHAIR HAVE PUBLISHED 5 MONOGRAPHS, INCLUDING "METHODS AND DEVICES
FOR THE CONVERSION OF GRAPHIC INFORMATION", AND "THE AUTOMATIC INPUT
OF GRAPHS IN ELECTRONIC COMPUTERS". THE RESEARCH ENCOMPASSED THE
FOLLOWING AREAS-- IMPROVING THE ACCURACY AND THE RELIABILITY OF
MEASURING INDEXES. DEVELOPMENT OF COLOR READING DEVICES, DEVELOPMENT

19660849

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AN0025930

OF CONVERTING DEVICES FOR OBTAINING GRAPHS WITH SPECIFIED CHARACTERISTICS. USING SIMPLE AND RELIABLE COLOR DECODERS, THERE HAVE BEEN PROPOSED AND TRIED METHODS OF READING AND DIGITAL RECORDING OF MAPS AND GRAPHS. ONE OF THE DEVICES DEVELOPED BY THE INSTITUTE ENABLES A COMPUTER TO READ READILY GRAVITATIONAL, MAGNETIC OR TOPOGRAPHIC MAPS. ANOTHER DEVICE ENABLES ANY COMPUTER TO DISTINGUISH THE COLORS OF RAINFALL, TO RECORD THEM AND TO READ THEM INTO ITS MEMORY.

THE CHAIR OF ENGINEERING ELECTRONICS IS COORDINATING RESEARCH IN THE AREA OF CONVERSION AND INPUT OF GRAPHIC MATERIAL ON THE ALL-UNION SCALE.

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13660850

1/2 035 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--MAGNETORESISTANCE OF BISMUTH THIN FILMS IN A PARALLEL MAGNETIC
FIELD -U-
AUTHOR-(02)-ANDRIYEVSKIY, V.V., KOMNIK, YU.F.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1582-4
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--BISMUTH, MAGNETIC FIELD, MAGNETORESISTANCE, VACUUM
DISTILLATION, METAL VAPOR DEPOSITION, METAL FILM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/0958 STEP NO--UR/0181/70/012/005/1582/1584
CIRC ACCESSION NO--AP0133044
UNCLASSIFIED

2/2 035 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP 0133044
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION WAS CARRIED OUT OF
MAGNETORESISTANCE IN A PARALLEL FIELD IN BI FILMS IN WHICH A QUANTUM
SIZE EFFECT IS OBSD. BI FILMS WERE PREPD. BY CONDENSATION IN VACUUM ON
A FRESH CLEAVAGE OF MICA AND WERE ORIENTED ALONG THE TRIGONAL AXIS
(111). FOR SOME SPECIMENTS, IN THE FIELD DEPENDENCE OF
MAGNETORESISTANCE THERE ARE 2 OSCILLATIONS OF SMALL AMPLITUDE; THEIR
PERIODS DECREASE WITH INCREASING FIELD. FACILITY: FIZ.-TEKH.
INST. NIZKIKH TEMP., KHARKOV, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--1,4,BENZODIAZEPINES AND THEIR DERIVATIVES. III. SYNTHESIS AND
CORRELATION BETWEEN THE STRUCTURE AND PHARMACOLOGICAL ACTIVITY OF
AUTHOR--(05)--BOGATSKIY, A.V., VIKHLYAYEV, YU.I., ANDRONATI, S.A., KLYGUL,
T.A., CHUMACHENKO, T.K.
COUNTRY OF INFO--USSR

SOURCE--KHIM.-FARM. ZH. 1970, 4(1), 5-9

DATE PUBLISHED-----70

SUBJECT AREAS---BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TRANQUILIZER, ANTICONVULSANT DRUG, MUSCLE RELAXANT, HYPNOSIS,
CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0540

STEP NO--UR/0450/70/004/001/0005/0009

CIRC ACCESSION NO--AP0137629

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137629

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESULTS OF PHARMACOL. TESTS WERE GIVEN FOR 14 DERIVS. OF 1,3,DIHYDRO,(2H),1,4,BENZODIAZEPIN,2,ONE SYNTHESIZED EARLIER (ANDRONATI AND BOGATSKII, 1969). DETAILS OF IR SPECTRA WERE ALSO REPORTED. ALL THE COMPOS. COMBINED TRANQUILIZING, ANTICONVULSANT, MUSCLE RELAXING, AND HYPNOTIC ACTIVITIES; SOME OF THEM REVEALED ALSO SEDATIVE ACTIVITY. DISORDERS OF THE MOTOR ACTIVITY WERE OBSD. IN CERTAIN CASES. FACILITY: ODESS. UNIV. IM. MECHNIKOVA, ODESSA, USSR.

UNCLASSIFIED

USSR

UDC: 681.335

TEMNENKO, G. K., PALADIY, M. V., ANDRONATIY, N. R.

"Bridge Scanners for Phototracking Systems"

Elektroenerg. i avtomatika (Electric Power and Automation), vyp. 6, Kishinev, Moldavian SSR Academy of Sciences, 1970, pp 64-74 (from RZh-Avtomatika, Tele-mekhanika i Vychislitel'naya Tekhnika, No 8, Aug 70, Abstract No 8B133)

Translation: This article contains an investigation of the operating principle and methods of designing a bridge scanner with a high-resistance output used in automatic control systems and in computation devices when reproducing information given in the form of graphs. There are five illustrations and a nine-entry bibliography.

1/1

- 81 -

ANDRONIK, I. K.

SPK 59208
6-73

XI-14. CHARACTERISTIC FEATURES OF OBTAINING CANNON TELLURITE CRYSTALS FROM A SOLUTION-MELT

[Article by I. K. Andronik, K. D. Smolovskiy, Kishinevskiy Novobitum, III Sinyozum, no. 1, 1972, p. 150]

In order to obtain cadmium telluride crystals, the method of zone recrystallization from the solution-melt in the zone enriched with tellurium was used.

The advantages of this method consist in the fact that it is possible to obtain homogeneous single crystals of practically unlimited dimensions with low concentration of the characteristic defects and low concentration of the impurities (for displacement of the liquid zone, purification of the bar takes place simultaneously). Inasmuch as recrystallization is carried out at a temperature appreciably below the melting point of the pure compound, the probability of diffusion of the impurities from the crucible material is decreased.

The temperature of the zone was determined by the tellurium concentration in the zone, and it was found within the limits of 700-800°C. The liquid cadmium telluride at the rate of 0.5-1.2 mm/hour.

The density of the etching holes in the crystals obtained is on the order of 10^2 holes/cm². At room temperature the characteristic conductivity is observed, the specific resistance $\sim 10^4$ ohm-cm, and the electron mobility is near 1000 cm²/v-sec.

USSR

UDC [537.226+537.311.33]:[537+535]

ANDRONIK, I. YA., MUSHINSKIY, V. P.

"Obtaining and Investigating Certain Optical Properties of $\text{In}_2\text{S}_{3x}\text{Se}_3(1-x)$ Single Crystals"

V sb. Nekot. vopr. khimii i fiz. poluprovodnikov slozhn. sostava (Certain Problems in the Chemistry and Physics of Semiconductors of Complex Composition -- Collection of Works), Uzhgorod, 1970, pp 201-204 (from RZh Fizika, No 12, Dec 71, Abstract No 12Yel441)

Translation: The optical absorption and reflection spectra in the range 1-6 ev were investigated in samples of $\text{In}_2\text{S}_{3x}\text{Se}_3(1-x)$ ($0 \leq x \leq 1$) produced by chemical transport reactions at 700°C. The absorption curves measured at 300°K are shifted toward higher energies with an increase in x , and their analysis shows that the boundary of the basic absorption is formed by direct and indirect resolutions of the optical transitions. The energy of direct and indirect transitions is given as a function of the crystal composition. Characteristic of reflection curves are two maxima in the region 4.3 and 5.4 ev, respectively.

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USSR

ANDRONIK, I. YA., MUSHINSKIY, V. P., Nekotor. vopr. khimii i fiz. poluprovodnikov slozhn. sostava, Uzhgorod, 1970, pp 201-204

In crystals with $x = 0.8-1.0$ ev there is observed an additional maximum in the region 3.05 ev, the intensity of which drops with an increase in the concentration of In_2Se_3 . The reflection maximum in the absorption band is caused by vertical optical transitions at critical points of the Brillouin zone. The reflection spectra in the infrared region contain an extreme minimum caused by plasma resonance reflection. A. Ya. O.

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- 47 -

USSR

UDC 577.17+547.963.3

ANDRONIKASHVILI, E. L., Academician of the Academy of Sciences Georgian SSR,
Institute of Physics, Academy of Sciences Georgian SSR

"Possible Mechanism for the Therapeutic Action of Ionizing Radiation"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 68, No 2, Nov 72,
pp 313-316

Abstract: In 1968 L. M. Mosulishvili, A. I. Belokobyl'skiy, N. Ye. Kharabadze, and E. N. Ginturi, staff members of the Institute of Physics Academy of Sciences Georgian SSR, developed a precision method for the radioactivation determination of trace amounts of some metals that are bound by nucleic acids. Subsequently, E. L. Andronikashvili, L. M. Mosulishvili, A. I. Belokobyl'skiy, V. P. Mandzhgaladze, N. Ye. Kharabadze and Ye. Yu. Yefremova studied the question of the binding of some metals by nucleic acids extracted from both normal and sarcomatous tissues. The present article studies six elements: zinc, cobalt, antimony, scandium, silver and iron. It was found that rat DNA under normal conditions contains all the elements except cobalt, with iron in first place, antimony second, followed by silver and zinc. The quantity of these elements in DNA molecules extracted from transplanted carcinoma M-1 and carcinosarcoma W-256 tumors increases in practically all cases. Total
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USSR

ANDRONIKASHVILI, E. L., Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 68, No 2, Nov 72, pp 313-316

RNA molecules under normal conditions, within the sensitivity limits of the radioactivation method, contain no cobalt, iron, silver or scandium, while the zinc and antimony concentration is approximately six times higher than in DNA. In tumor RNAs the zinc and antimony concentrations increase two- (M-1) and threefold (W-256).

American biochemists (J. P. Slater et al., E. L. Lichti et al) have now found zinc in DNA polymerase molecules and in young collagen molecules. American (H. G. Petering et al.) and West German (U. Weser et al.) scientists have performed animal experiments showing that zinc at certain concentrations plays a special role in stimulating the biosynthesis of nucleic acids (both DNA and RNA).

On the basis of data now available, it is possible to suggest a mechanism for the therapeutic action of ionizing radiation, the result of which is a slow-down in the proliferative growth of the number of cells, in other words suppression of the DNA reduplication and RNA replication process. On the basis of Soviet and American data, it can be regarded as established that metal ions, including zinc ions, play a certain role in these processes.

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AN0040379

A

UR 9012

TITLE-- ETERNAL RELATIONSHIP

NEWSPAPER-- PRAVDA, MARCH 31, 1970, P 6, COLS 1-8

ABSTRACT-- I. N. FRANTSEVICH, DIRECTOR, THE INSTITUTE OF MATERIAL
SCIENCE PROBLEMS, MEMBER OF THE UKRAINIAN ACADEMY OF SCIENCES -
V. M. TUCHKEVICH, DIRECTOR, THE PHYSICAL-TECHNICAL INSTITUTE, CORRE-
SPONDING MEMBER OF THE UKRAINIAN ACADEMY OF SCIENCES -
E. L. ANDRONIKASHVILI, DIRECTOR, THE INSTITUTE OF PHYSICS, MEMBER
OF THE GEORGIAN ACADEMY OF SCIENCES - I. N. PYSTYNSKIY, HEAD OF A
CHAIR, TOMSK INSTITUTE OF RADIOELECTRONICS AND ELECTRONIC ENGINEER-
ING - PARTICIPANTS OF THE "ROUND TABLE" PRAVDA-SPONSORED DISCUSSION,
EXPRESS THEIR VIEWS ON THE COLLABORATION BETWEEN SCIENTISTS AND
INDUSTRY.

FRANTSEVICH STRESSED THE DESIRABILITY OF DESIGN BUREAUS AND PILOT
PLANTS IN THE STRUCTURE OF RESEARCH INSTITUTES.

19741827

AN0040379

TUCHKEVICH ILLUSTRATED HIS POINT BY CITING THE COLLABORATION BETWEEN HIS INSTITUTE, THE ENERGETICS INSTITUTE, AND SOME UNNAMED PLANT ENGINEERS THAT WAS NECESSARY TO DEVELOP A SEMICONDUCTOR FREQUENCY CONVERTER.

ANDRONIKASHVILI MENTIONED A CAPACITANCE-DISCHARGE CHAMBER, DEVELOPED BY HIS INSTITUTE, WHICH CAN COMPETE, IN SOME INSTANCES, WITH THE HYDROGEN BUBBLE CHAMBER.

PUSTYNSKIY CITED THE PTU-8G, AN INSPECTION TV CAMERA, "TELEGLAZ", WHICH WAS MADE BY HIS INSTITUTE ON THE ORDER AND WITH THE ASSISTANCE OF THE INSTITUTE OF MINING OF THE SIBERIAN BRANCH OF THE ACADEMY OF SCIENCES. THE LETTER G IN THE DESIGNATION STANDS FOR "MINING". THE LATEST, THE TENTH "TELEGLAZ", IS THE SMALLEST MODEL WHOSE TV CAMERA IS FITTED IN A METAL CYLINDER 25-MM IN DIAMETER. IN THE FIELD, THE CAMERA CAN BE POWERED BY A 12-VOLT BATTERY. THIS INSTRUMENT WAS ALSO MADE IN THE SHOPS OF THE INSTITUTE. OTHER INSTRUMENTS MADE BY THE TOMSK INSTITUTE OF RADIOELECTRONICS AND ELECTRONIC ENGINEERING HAVE FOUND USES IN AVIATION AND CHEMICAL PLANTS AND THE INSTITUTE OF ATOMIC ENERGY IMENI KURCHATOV.

19741828

USSR

UDC 539.4

ANDRONIKASHVILI, E. L., POLITOV, N. G., PAPERNO, I. K., RAZMADZE, A. K.

"Particularities of the Plastic Flow and Deformation Strengthening of Ionic Crystals"

Khar'kov, Fiz. Mekhanizmy Plastich, Deform. pri Nizkikh Temperaturakh --
Sbornik (Physical Mechanisms of Plastic Deformation at Low Temperatures --
Collection of Works) 1971, p 33 (from Referativnyy Zhurnal, Mekhanika, No 2,
Feb 72, Abstract No 2V1247 by L. I. Mirkin)

Translation: An investigation was made of the influence of irradiation in a reactor, mechanical loading, and cooling upon the properties of crystals. During the stretching of an irradiated crystal, failure takes place prior to the attainment of plasticity due to the high strength of fixation of the dislocations during irradiation. The irradiation of prestressed crystals permits the strength to be increased by a factor of 2, and the plasticity by a factor of 3. On the basis of the example of lithium fluoride crystals it was shown that irradiation fixes structural changes during loading. Lowering the irradiation temperature decreases the ultimate strength of nonloaded crystals and does not affect the ultimate strength of crystals under load. Decreasing the temperature to 77°K and x-ray irradiation brings about a threefold increase

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USSR

ANDRONIKASHVILI, E. I., ROYNISHVILI, Ye. Yu. and KHECHINASHVILI, N. N., Institute of Physics, Academy of Sciences, Georgian SSR, Tbilisi

"Calorimetric Study of the Possibility of Phase Transformations in Biological Tissues at Low Temperatures"

Moscow, Biofizika, Vol 15, No 3, May/Jun 70, pp 484-487

Abstract: The dependence of specific heat on temperature was studied in calf liver and frog muscle by the method of low temperature calorimetry at -196°C to $+10^{\circ}\text{C}$. Using a preparation of liver and muscle in Earl's solution and glycerine of various concentrations, it is possible to extend significantly the interval of crystallization, and to displace the onset of crystallization of water, however no low-temperature phase transformations were noted in these experiments.

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USSR

ANDRONOV, A. M.

"Short Course in Probability Theory and Mathematical Statistics for Civil Aviation Economics Engineers. Part 2. Mathematical Statistics"

Kratkiy Kurs Teorii Veroyatnostey i Matematicheskoy Statistiki dlya Inzhenerov-ekonomistov Grazhdanskoy Aviatsii. Ch. 2. Matematicheskaya Statistika [English Version Above], Riga Institute of Civil Aviation, 1971, 156 pages (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V166K).

NO ABSTRACT.

1/1

USSR

UDC 669.2:621.746

MOLCHANOV, M. D., BONDAREV, B. I., IVANOV, V. S., KALYAPIN, A. S., PONOMARENKO, A. M., and ANDRONOV, A. N.

"Development and Industrial Application of FL10 Flux"

Tsvetnyye Metally, No 3, Mar 71, pp 70-71

Abstract: FL10 flux contains no compounds which react with such alloying elements as zirconium and the rare earth elements, and therefore can be recommended for processing of all magnesium alloys without limitation. The cost of FL10 is 16 rubles less than the cost of FL5 flux.

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USSR

UDC 669.2:621.746

MOLCHANOV, H. D., BONDAREV, B. I., IVANOV, V. S., KALYAPIN, A. S., PONOMARENKO, A. M., and ANDRONOV, A. N.

"Development and Industrial Application of FL10 Flux"

Tsvetnyye Metally, No 3, Mar 71, pp 70-71

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USSR

UDC 621.385.032.21.001.5

ANDRONOV, A. N., LEPESHINSKAYA, V. N.

"On the Problem of Destruction of Oxide Films by an Electron Beam"

Moscow, Radiotekhnika i Elektronika, Vol 16, No 10, Oct 71, pp 2005-2006

Abstract: The authors propose a simple phenomenological model of the process of destruction of oxide films under electron bombardment. The proposed scheme elucidates the possible reasons for the disagreements between different researchers in interpreting experimental results on this phenomenon.

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- 91 -

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Magnesium

USSR

UDC 669.721:621.774

BONDAREV, B. I., IVANOV, V. S., ANDRONOV, A. N., and PETROVA, O. V.

"Special Features in the Technology of Introducing Zirconium Into Magnesium Alloys"

Moscow, Tsvetnyye Metally, No 6, Jun 70, p. 50

Abstract: One of the basic difficulties in the industrial production of magnesium alloys containing zirconium lies in the means for introducing the zirconium into the melt. Three industrial introduction processes are cited: 1) Introduction of zirconium from calcium fluorozirconate; 2) Introduction from a salt melt containing 66% K_2ZrF_6 , 26% $LiCl$, and 8% CaF_2 ; and 3) Introduction from binary and ternary alloys. The principal disadvantages of the first two processes are outlined. It was established, during experiments and industrial fusion of VM65-1 alloy in reflecting furnaces of 12 ton capacity, that the best results on zirconium assimilation were obtained with a binary alloy containing 15-20% Zr. A brief description of the procedure is given. A comparison of results on zirconium assimilation obtained by the above described method and others show that the use of binary Mg-Zr alloy reduces the irreversible metal losses in the melt by 1.5 times.

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1/2 027 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--INOCULATING DEFORMABLE MAGNESIUM ALLOYS -U-
AUTHOR--(104)-DETKOVA, O.V., BONDAREV, B.I., IVANOV, V.S., ANDRONOV, A.N.
COUNTRY OF INFO--USSR *A*
SOURCE--TSVET. METAL. 1970, 43(4), 79-80
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--MAGNESIUM ALLOY, CRYSTAL STRUCTURE, ZINC ALLOY, ALUMINUM
ALLOY, MANGANESE ALLOY, SILICON ALLOY, ZIRCONIUM ALLOY, BORON ALLOY,
INOCULATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3008/0333 STEP NO--UR/0136/70/043/004/0079/0080
CIRC ACCESSION NO--AP0137438
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137438

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHARACTERISTIC FEATURES OF THE INOCULATION PROCESS OF DEFORMABLE ALLOYS OF THE MG-MN AND MG-AL-AN-MN SYSTEMS. USE OF C CONTG. ADDITIVES AS INOCULANTS, AND THE INFLUENCE OF SI, ZR, AND B ON THE GRAIN SIZE ARE DISCUSSED.

UNCLASSIFIED

USSR-

UDC 616.61-002.151

3

GRINSHPUN, O. Ya., Col Med Serv, Candidate of Medical Sciences;
VAS'KOV, V. G., Lt Col Med Serv; MAKSIMOV, Ye. V., Lt Col Med
Serv; ANDRONOV, A. S., Capt Med Serv; MARAKUSHEV, M. I.;
KHOMENKO, L. M.; TSEY, A. L.

"Some Clinical Data on Hemorrhagic Nephrosonephritis"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 8, Sep 71, pp 50-51

Abstract: Observation of 17 cases of hemorrhagic nephrosonephritis (HNN) sporadically occurring in the Transcarpathian Region revealed a typical progress of this disease through three stages. In the first stage, lasting 2-4 days, body temperature rapidly rose to 38-40°C, the patients complained about headache, pain in muscles and joints, and general weakness: they were photophobic, had cutaneous hyperemia in the face and upper trunk, and some developed dry noises in their lungs. An incorrect diagnosis was made in all cases, partly because this disease is very rare in Transcarpathia. In the second stage, lasting 4-8 days, clinical signs characteristic of HNN developed

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USSR

GRINSHPUN, O. Ya., et al, Voyenno-Meditsinskiy Zhurnal, No 8,
Sep 71, pp 50-51

in all patients, and the proper diagnosis was established in all. Only four patients had hemorrhagic conjunctiva or nosebleed. All suffered from gastrointestinal disorders and from oliguria (down to 200 ml per day) with hematuria and proteinuria. The third stage -- convalescence -- began on the 9th - 11th day with the onset of diuresis, which soon reached 6-8 liters per day. Hemorrhages, vomiting, fever, and other discomfort subsided, and the patients regained appetite and thirst. In the initial days of polyuria, concentration of gamma globulins in the protein fraction increased to 27.9%, while plasma potassium decreased to 9.3 mg% and plasma calcium to 6.8 mg%. The patients lost 5-8 kg body weight. The stage of convalescence lasted 2-3 weeks. The treatment was symptomatic, and all patients recovered without complications.

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- 40 -

USSR

UDC: 621.396.626.3

ANDRONOV, I. S. and VORONIN, N. N.

"Noise Immunity of Scattered Reception With Threshold Antenna Switching"

Moscow, Radiotekhnika, No 10, 1972, pp 1-7

Abstract: The interest in scattered reception with threshold antenna switching is explained by the fact that no increase in receiver and demodulation equipment is required to realize this method. Asserting that other investigators have not understood the noise immunity of which this method is capable, the authors provide an analysis of this immunity in an actual circuit of scattered reception with antenna switching in several cases of practical interest. Especial attention is given to the noise immunity in the reception of binary signals, orthogonal in the amplified sense of the term, with active pauses, in statistically uniform and nonuniform scattering and with Rayleigh-independent fading. The effect on the immunity of the amplitude of the threshold level is also examined. For the purposes of the analysis, the authors use the mathematical model of the k-th antenna signal for the duration of one signal element. It is assumed that the period of the antenna switching is $1/2$

USSR

ArDRONOV, I. S., et al, Radiotekhnika, No 10, 1972, pp 1-7

a multiple of the signal element duration and that the switching is synchronous with the first element of the signal that arrives. The authors find that under real conditions, this method of reception permits increased noise immunity at low additional expense for equipment.

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- 6 -

Thin Films

USSR

UDC 539.4.019.3

ANDRONOV, V. M., and BAZYURA, R. I., Kharkov

"Measurement of Internal Friction in Very Thin Films"

Moscow, Fizika i Khimiya Obrabotka Materialov, No 4, Jul-Aug 73, pp 146-149

Abstract: Experimental results are presented from measuring the internal friction in thin copper films in relation to their thickness where measurement were made on films less than 1000 Å thick using the lateral vibrations from a permanent magnetic field in the kilohertz region. These measurements showed that film strength diminishes with increased thickness while initial strain increases with increased thickness. Mathematical expressions are presented which were used to calculate inductive emf, and a diagram of the apparatus used to measure internal friction is shown. Three figures, three bibliographic references.

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1/2 043

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--THE STRESS-STRAIN DIAGRAM AND INTERNAL FRICTION OF COPPER WHISKERS
UNDER UNIAXIAL EXTENSION AND A NEW METHOD OF STUDY -U-
AUTHOR-(03)-RABUKHIN, V.B., PINES, B.YA., ANURONOV, V.M.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA METALLOV I METALLOVEDENIE, FEB. 1970, 29, (2), 436-439

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--STRESS ANALYSIS, YIELD STRESS, HARMONIC OSCILLATION, TENSILE
STRESS, INTERNAL FRICTION, CRYSTAL DISLOCATION, COPPER WHISKER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRACTION--3003/0343

STEP NO--UR/0126/70/029/002/0436/0439

CIRC ACCESSION NO--AP0129575

UNCLASSIFIED

2/2 043

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129575

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NEW EXPERIMENTAL METHOD OF STUDYING THE STRESS-STRAIN DIAGRAM OF CU WHISKERS AND DETERMINING THEIR YIELD CHARACTERISTICS IS DESCRIBED. IN THIS METHOD THE ELASTIC STRESSES IN THE MATERIAL ARE DETERMINED BY ANALYSING THE RESONANCE FREQUENCY OF TRANSVERSE OSCILLATIONS SET UP IN THE STRETCHED SAMPLE. ONE NOTEWORTHY FEATURE IS THAT AT THE INITIAL STAGE OF EASY SLIP THE INTERNAL FRICTION REMAINS APPROX. CONSTANT, INDICATING THAT AT THIS STAGE A LARGE PROPORTION OF THE DISLOCATIONS FORMED PASS OUT OF THE CRYSTALS.

UNCLASSIFIED

USSR

UDC 621.762.2(088.8)

ANDRONOV, V. P.

"A Method for the Granulation of Metals and Alloys"

USSR Author's Certificate No 253090, filed 27 Aug 66, published 24 Feb 70,
(from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11G330 P)

Translation: A method is proposed for the granulation of metals and alloys by teeming molten metal into a tank with coolant from a melting crucible through a calibrated aperture. To increase the granulator efficiency and capacity, the molten metal is teemed into the tank with coolant at a temperature which exceeds the melting temperature by 20-40°.

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USSR

UDC 534

ANDRONOV, V. V., Moscow

"The Moving of a Body on a Rough Inclined Plane Performing Forward Transverse Vibrations in Its Plane"

Moscow, Izvestiya Akademii Nauk, Mekhanika Tverdogo Tela, No 3, May-Jun 72, pp 7-14

Abstract: The vibration moving of a body on a plane with purely transverse vibrations is analyzed on the model of a mass point moving on a rough inclined plane performing forward transverse vibrations. Such problems of vibration moving arise by vibrational intrusion, vibrational cutting, and vibrational insertion of shells. The solutions are based on the analysis of the system of equations of motion of a body moving on a plane in time intervals. The discussion includes the case of kinematically given transverse motion, the general case of motion with restriction to determined motions and the solution of the average dislocation speed of the vibration, and the special case of given speed of transverse motion and instantaneous standstills. Graphs of periodic solutions of a simplified equation of motion demonstrate the effect of an inertia factor δ on the character of periodic motions and the magnitude of the error of the average speed of motion determined from derived approximation formulas. Two illustr., thirty seven formulas, six biblio. refs.

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- 105 -

USSR

UDC 778.534.83

CHERKASOV, Yu. A., Candidate of Sciences, KISLOVSKIY, I. L., ANDRONOV, V. V.,
LYUBIN, V. M., Candidate of Sciences, AND FEDOROVA, Ye. I.

"Electrophotographic Spectrovisor for the Visible Area of the Spectrum Based
on Recording Vidicon"

Optiko-mekhanicheskaya Promyshlennost', No 10, 1971, pp 28-32.

ABSTRACT: Results are presented from a study of the parameters of an electro-
photographic spectrovisor, based on a recording vidicon. The spectrovisor can
be used for observation and recording of spectrograms and photomicrograms in
the visible area in a periodic mode at 25 frames per second and in the time
integration mode with a resolution of 25 mm^{-1} and a sensitivity of up to
200 state standard units. The method of visualization of spectra is based on
recording of an optical image by a recording photoconductive layer, so that
the optical image is converted to the corresponding potential relief with sub-
sequent visualization.

1/1

USSR

UDC 621.578.33

ANDRONOVA, I.A., KHANDOKHIN, P.A. [Scientific-Research Radiophysics Institute]

"Investigation Of The Effect Of A Magnetic Field On The Characteristics Of A Ring Laser At A 3.39 Micron Wave Length"

Izv.VUZ: Radiofizika, Vol XV, No 5, May 72, pp 703-712

Abstract: The paper is concerned with a theoretical consideration of the effect on certain characteristics of lasers of various configurations (linear, triangular, quadrangular) of a longitudinal magnetic field which is superimposed on an active medium. The calculations were primarily made in order to determine the polarization effects in lasers with an arbitrary anisotropy of losses (in particular with the presence of a Brewster window) and also the effect of frequency drift and frequency splitting in triangular lasers. In addition a corresponding experimental study was made with a He²-Ne²⁰ laser with a triangular resonator at a 3.39 micron wavelength. The theoretical and experimental results are in good agreement. During supply of the magnetic field, elimination of the competition region was observed. The authors thank I.L. Bershteyn for useful discussion of the work. 4 fig. 15 ref. Received by editors, 10 September 1971.

1/1

USSR

UDC 911.3.613.11

NEVEROVA, N. P., and ANDRONOVA, R. I.

"Cholinesterase Activity During Human Acclimatization in the Arctic"

V. sb. Akklimatiz. i krayev, patol. cheloveka na Severe (Acclimatization and Regional Pathology of Man in the Far North--collection of works), Arkhangel'sk, 1970, pp 126-128 (from RZh-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No 1.36.50 by T. Koretskaya

Translation: A total of 198 workers were studied; all came from the central zone of the USSR. During the polar night (January), cholinesterase activity was 2-2-1/2 times higher than normal -- it was 13.5 min. or 44-100 units. Data was the same for the polar day. The extreme of cholinesterase activity was noted at air temperatures of -14°C, -20°C, and -28°. The character and direction of the field of enzyme distribution indicates a nonlinear correlation. The same relationship was observed between cholinesterase activity and atmospheric pressure. A linear relationship was found between change of cholinesterase activity and air humidity. There was a small degree of correspondence between cholinesterase activity and wind speed.

1/1

USSR

UDC 911.3.613.11 (98)

ANDRONOVA, T. I., and NEVEROVA, N. P.

"The Effect of Transpolar Climate on Red and White Blood Cell Systems during Initial Acclimatization Periods for Man"

V sb. Akklimatiz. i krayev. patol. cheloveka na Severa (Acclimatization and Pathology of Man in the Far North--collection of works), Arkhangel'sk, 1970, pp 11-13 (from RZH-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No 1.36.49 by V. Zhadovskaya)

Translation: Data is presented on the composition of red and white blood cells during the polar night and polar day in young workers three months after arrival in the Far North. The first examination, 3-7 days after arrival, showed no deviation from normal. Acclimatization during the polar night was accompanied by an increase in hemoglobin and erythrocyte levels, while reticulocytes remained constant or even slightly decreased. Acclimatization during the polar day showed some decrease in hemoglobin; erythrocyte count was unchanged; and reticulocytes decreased. White blood cell changes during the polar day included some decrease in the leukocyte count with relative increase in lymphocyte level. During the period of the polar night, the leukocyte count increased with relative decrease in the percentage of lymphocytes.

1/1

USSR

UDC 621.396.6-181.48

ANDROSHCHUK, A. F., VASIL'YEV, YU. P., STAVROVICH, N. V.

"Prospects for Creating Thin-Film Rhenium Resistor Microcircuits"

Tr. VNIi elektroznerit. priborov (Works of the All-Union Scientific Research Institute of Electrometering Devices), 1971, No 10, pp 108-114 (from RZh-Radiotekhnika, No 7, Jul 72, Abstract No 7V297)

Translation: A study was made of the time stability of thin-film rhenium resistors with a specific resistance of 100 ohms/square. The optimal conditions for depositing the rhenium on the UVN-2M-1 device are developed. The prospects for utilizing rhenium as the material for manufacturing thin-film highly stable resistor microcircuits based on it is proved experimentally.

1/1

- 54 -

1/2 032
TITLE--COMBUSTION OF CALCIUM -U- UNCLASSIFIED
PROCESSING DATE--04DEC70
AUTHOR--ANDROSOV, M.K.
COUNTRY OF INFO--USSR
SOURCE--KHIM. SHK. 1970, 25(2), 88
DATE PUBLISHED-----70
SUBJECT AREAS--PROPULSION AND FUELS, CHEMISTRY
TOPIC TAGS--COMBUSTION, CALCIUM, CALCIUM CARBIDE, CHARCOAL, IGNITION,
POTASSIUM NITRATE, SODIUM NITRATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO-----FD70/605017/F02 STEP NO--UR/0509/70/025/002/0088/0088
CIRC ACCESSION NO--AP0140768
UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--04DEC 71

CIRC ACCESSION NO--AP0140768

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMBUSTION OF CA CAN BE ACCOMPLISHED WITH RELATIVE EASE BY DIPPING A CLEANED PIECE OF CA IN A MELT OF KNO SUB3 OR NANO SUB3 BEFORE PLACING IT IN THE BURNER FLAME. CA CARBIDE CAN ALSO BE PREPD. BY PLACING THE NITRATE COATED CA SAMPLE BETWEEN PIECES OF CHARCOAL BEFORE IGNITION.

UNCLASSIFIED

2

USSR

UDC: 547.26'118.07

KHARIT, Ya. A., ZAVLIN, P. M., SHVARTS, A. S., ANDROSOV, V. F., ZAKHARA, V. A.,
KOROTKAYA, L. I., Leningrad Institute of the Textile Industry and Light Industry
imeni S. M. Kirov

"A Method of Producing Polyphosphonates"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztzy, Tovarnyye Znaki, No 26,
1970, Soviet Patent No 278692, Class 12, filed 23 May 69, p 24

Abstract: This Author's Certificate introduces: 1. A method of producing poly-
phosphonates of the formula



n ≈ 6. As a distinguishing feature of the patent, diethylamidoanilide or
phosphonic acid is interacted with ethanolamine in the presence of heat with
subsequent isolation of the goal product by conventional methods. 2. A modification
of the method distinguished by the fact that the process is carried out at a tem-
perature of 100-150°C.

1/1

1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--ELECTROKINETIC POTENTIAL OF A POLYACRYLONITRILE FIBER MODIFIED WITH
HYDRAZINE HYDRATE -U-
AUTHOR--(05)-ANDROSOV, V.F., ANDREYEVA, K.I., BONDARENKO, V.S.; ZHARKOVA,
M.A., ROMANOVA, T.A.
COUNTRY OF INFO--USSR

SOURCE--KHIM. VOLOKNA 1970, (2), 28-30

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--POLYACRYLONITRILE FIBER, HYDRAZINE HYDRATE, PHYSICAL CHEMISTRY
PROPERTY, TRANSITION TEMPERATURE, ELECTRIC POTENTIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3005/0043

STEP NO--UR/0183/70/000/002/0028/0030

CIRC ACCESSION NO--AP0132338

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--04DEC70.

CIRC ACCESSION NO--AP0132338

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLYACRYLONITRILE (I) FIBERS, TREATED WITH AQ. N SUB2 H SUB4 H SUB2 O SOLN., FOLLOWED BY HEAT TREATMENT UNDER N, ACQUIRED NEW PHYSICOCHEM. PROPERTIES. THE ELECTROKINETIC POTENTIAL (ZETA) AND GLASS TRANSITION TEMP. OF THE MODIFIED I FIBERS WERE PROPORTIONAL TO THE HEAT TREATMENT TEMP. A METHOD WAS PROPOSED FOR THE DETN. OF THE DEGREE OF CROSSLINKING FROM THE RELATIVE CHANGE IN ZETA. FACILITY: LITLP IM. KIROVA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 013

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--DEPENDENCE OF ZETA POTENTIAL OF MAN MADE FIBERS ON THEIR STRUCTURE
-U-
AUTHOR--(02)-ANDROSOV, V.F., BONDARENKO, V.S.

COUNTRY OF INFO--USSR

SOURCE--DEUT. TEXTILTECH. 1970, 20(5), 283-5

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--POLYACRYLONITRILE FIBER, POLYVINYL ALCOHOL FIBER, POLYMER
STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD/0/605017/F06 STEP NO--GE/0043/70/020/005/0283/0285

CIRC ACCESSION NO--A90140776

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--04DEC7

CIRC ACCESSION NO--AP0140776

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ZETA POTENTIAL DECREASED LINEARLY WITH INCREASING GLASS TEMP. FOR POLYACRYLONITRILE FIBERS STRUCTURED WITH HYDRAZINE HYDRATE SOLN. THE ZETA POTENTIAL ATTAINED A MAX. AT DRAW RATIO SIMILAR TO 3.5 DURING THE WET DRAWING OF POLY(VINYL ALC.) FIBERS. THE RELATIONS BETWEEN FIBER STRUCTURE AND ZETA POTENTIAL ARE DISCUSSED. FACILITY: S. M. KIROV INST. TEXTILCHEM., LENINGRAD, USSR.

UNCLASSIFIED

1/2 046 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--POSSIBILITY OF STUDYING POLYMER STRENGTH BY MEANS OF POLARIZATION
INFRARED SPECTROSCOPY -U-
AUTHOR--(04)-SAVITSKAYA, A.N., KLIMENKO, I.B., VOLF, L.A., ANDROSOV, V.F.
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(4), 790-3
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--TENSILE STRENGTH, PLASTIC FILM, ACTIVATION ENERGY, OPTIC
PROPERTY, POLYVINYL ALCOHOL, PYRROLIDINE, KETONE, COPOLYMER, CHEMICAL
DECOMPOSITION, PLASTIC DEGRADATION, IR SPECTRUM, SPECTROSCOPIC ANALYSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1255 STEP NO--UR/0459/70/012/004/0790/0793
CIRC ACCESSION NO--AP0134929
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

2/2 046

CIRC ACCESSION NO--AP0134929
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE DICHROISM OF THE BAND AT 916 CM PRIME NEGATIVE1 PLOTTED VS. ORIENTED DRAWING FOR POLYMER FILMS INDICATED THAT POLY(VINYL ALC.) (I) AND I POLY(VINYLPYRROLIDINONE) MIXTS. HAD A SIMILAR DICHROISM, WHEREAS VINYL ALC. N VINYL PYRROLIDINONE COPOLYMER (II) HAD A SLIGHTLY LOWER VALUE. THE ACTIVATION ENERGY OF DEGRADATION WAS ESSENTIALLY THE SAME FOR THE 3 POLYMERS, WHILE THE STRUCTURE SENSITIVE COEFF. OF II WAS MARKEDLY HIGHER THAN THAT OF I. THE TENSILE STRENGTH OF THE POLYMERS CAN BE QUAL. EVALUATED FROM THE DICHROISM OF THE CORRESPONDING BANDS. FACILITY: LENINGRAD. INST. TEKST. LEGKOI PROM. IM. KIROVA, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC: 621.396.69:621.372.412

ANDROSOVA, V. G., BIRYUKOV, V. I.

"An AT-Section Quartz Piezoelectric Element"

USSR Author's Certificate No 267703, filed 18 Apr 68, published 8 Jul 70
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1V352 P)

Translation: This Author's Certificate introduces an AT-section quartz piezoelectric element made in the form of a rectangular plate which is longer in the direction of the X-axis of the crystal. To suppress side resonances, the length of the piezoelectric element is related to the thickness by the following expression:

$$l_x = 1.61Sn + 2.576S,$$

where l_x is the length of the piezoelectric element, S is the thickness of the piezoelectric element, and n is a whole number.

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USSR

UDC 621.373.421.13:621.372.412

A
ANDROSOVA, V. G., BIRYUKOV, V. I., POZDNYAKOV, P. G.

"Quartz Resonators with AT-Cut Piezoelements of Rectangular Shape"

Elektron. tekhnika. Nauchno-tekhn. sb. (Electronic Engineering. Scientific and Technical Collection), 1970, ser 9, vyp. 2, pp 33-39 (from RZh-Radio-tekhnika, No 9, Sep 70, Abstract No 9D278)

Translation: This article contains the results of investigations of the shape of the oscillations of rectangular AT-cut piezoelements and also the distribution of bias with respect to their surface. The arrangement of the minimum bias points attachment at which introduces insignificant damping are determined. The possibilities of selecting the relations of the dimensions of the piezoelements and their effect on the spectral and temperature characteristics are discussed. Results of measuring the resonator parameters with wire attachment confirming the possibilities of a significant improvement in the resonator parameters on frequencies below 1,000 kilohertz are presented. There are eight illustrations and a five-entry bibliography.

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AA0044795

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UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/70

243706 THE PHASE OF SIGNALS CONTROL CIRCUIT has oscillator (1) synchronizes the frequency of oscillators (2) and (3). Part of the power of oscillator (3), through phase shifter (4), goes to detector (5) which receives also reference signal from oscillator (2). On the output of phase detector appears the signal of error which, through compensation element (6), passes to unit (7) which adjusts reactance of oscillating circuit of oscillator (3) in such a way that the difference in phases on outputs of oscillators (2) and (3)

will be equal to the shift of phase produced by phase shifter (4).

17.11.67 as 1198059/26-9. N.G.ANDROSYUK & A.A.
RYAPOLOV (8.10.69.) Bul 17/14.5.69. Class 21e.
Int.Cl.G 01 r.

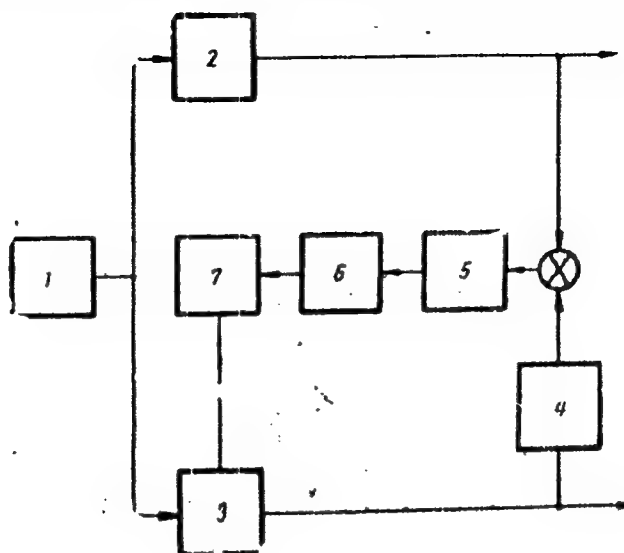
AUTHORS: Androsyuk, N. G.; Ryapolov, A. A.

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19771621

AA0044795



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19771622

jc

USSR

UDC 632.95

BABIN, Ye. P., SKAVINSKIY, Ya. P., ANDRUKHOV, N. A., SEDLOVA, L. N.,
LITOSHENKO, N. A., and RUDAVSKIY, V. P.

"Chlorination of Diphenyl Ether and Its Derivatives"

Khim. tekhnologiya. Nauch.-proizv. sb. (Chemical Technology. Science-
Production Collection), No 3 (69), 1973, pp 48-49 (from RZh-Khimiya, No 22,
25 Nov 73, Abstract No 22N571 by D. Z. Levin)

Translation: Sulfides of metals with variable valence or mixtures of Sb_2S_5 and I_2 are used as a catalyst to chlorinate Ph_2O and $(MeC_6H_4)_2O$. Example. Ph_2O and 0.3% Sb_2S_5 are loaded into a reactor and Cl_2 is supplied at 70-80° for 4 hours at the rate of 30 g/hour. Tetrachlorodiphenyloxyde is obtained, boiling point 155-7°/5. Heptachlorodiphenyloxyde, FeS, 111-3 are obtained in a similar fashion (the substance, catalyst, and boiling point in °C are given); octachloro-4,4'-ditolyl ether, FeS, 192-4 (ethyl alcohol); $\omega, \omega, \omega, \omega', \omega', \omega'$ -hexachloro-ditolyl oxide, PCl_5 , -; $\omega, \omega, \omega, \omega', \omega', \omega'$ -hexachloro-2,2'-dichloroditolyl ether, Sb_2S_5 , 300 (decomposition); trichloro-4,4'-dicarboxydiphenyloxyde, -, 259-61; pentachloro-4,4'-dicarboxydiphenyloxyde, $I_2 + H_2SO_4$, 192-3; octachloro-4,4'-dicarboxydiphenyloxyde, $H_2SO_3 + I_2$, 268-70. These chloro derivatives are used as synergistic additives in herbicides, insecticides, and nematocides.

1/1

Acc. Nr:

AP0044608

Ref. Code: UR0497

PRIMARY SOURCE: Klinicheskaya Meditsina, 1970, Vol 48,
Nr 1, pp 79-83

RADIOISOTOPE SCANNING IN THE DIAGNOSIS
OF ECHINOCOCCOSIS OF THE LIVER

A. I. Andrukovich, L. T. Aryamkin

Summary

Radioisotope scanning of the liver was carried out in 196 patients with symptoms of hepatomegalia. Echinococcosis of the liver was revealed in 36 persons. Hydatid form of the parasite was seen in 16, alveolar — in 20 patients. In all the cases the scannogram showed a typical picture of extensive defect of isotope absorption at the site of tumor localization with a marked symptom of «hollow» liver. For the purpose of early diagnosis of affections of the liver with echinococcus the authors recommend to conduct scanning of the liver in all patients admitted into hospitals with symptoms of hepatomegalia.

REEL/FRAME
19771285

1/2 018 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--A MIGHTY ACCELERATOR OF THE SCIENTIFIC TECHNICAL PROGRESS -U-
AUTHOR--(05)-ANDRUNAKIYEVICH, V., GONTSA, M., ZAYTSEV, G., GAMETSKIY, A.,
CHEBOTARU, A.
COUNTRY OF INFO--USSR
SOURCE--SOVETSKAYA MOLDAVIYA, JULY 2, 1970, P 2
DATE PUBLISHED--02JUL70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--COMPUTER R AND D, COMPUTER CENTER, ELECTRONIC COMPUTER/(U)BESM
4 DIGITAL COMPUTER, (U)M20 COMPUTER, (U)M220 COMPUTER, (U)BESM 3M
COMPUTER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/0812 STEP NO--UR/9021/70/000/000/0002/0002
CIRC ACCESSION NO--AN0111995
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AN0111995

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FIVE ARTICLES PUBLISHED UNDER ONE TITLE ARE DEALING WITH THE STATE OF THE COMPUTER ART IN THE MOLDAVIAN REPUBLIC IN GENERAL, AND THE COMPUTATION CENTER OF THE MOLDAVIAN ACADEMY OF SCIENCES IN PARTICULAR. SOME TIME DURING 1970, THE COMPUTATION CENTER ACQUIRED A BESM 4 ELECTRONIC COMPUTER. IT IS THE SECOND GENERATION TRANSISTORIZED COMPUTER WITH THE MEMORY CAPABLE OF STORING 8,000 NUMBERS. IN ADDITION IT HAS THE EXTERNAL MEMORY CAPACITY CONSISTING OF 8 MAGNETIC DRUMS AND 4 MAGNETIC TAPES WITH THE TOTAL STORAGE CAPACITY OF 4,131,072 NUMBERS. THE COMPUTER CAN PERFORM 20,000 OPERATIONS PER SECOND AND HAS A LIBRARY OF STANDARD PROGRAMS WHICH WERE COMPILES FOR M-20, BESM 3M, AND M 220 COMPUTERS.

UNCLASSIFIED

USSR

UDC: 519.48

ANDRUNAKIYEVICH, V. A., Academician of the MSSR Academy of Sciences, and RYABUKHIN, Yu. M.

"Torsion in Algebras"

Moscow, Doklady Akademii Nauk SSSR, 11 January 1973, pp 265-268

Abstract: Torsion theory, the theory of ideally hereditary radicals, is now being developed for rings, moduli, and algebras over primarily parallel fields. For the purpose of considering these various examples simultaneously, the authors of the present paper select as basically algebraic a system which is not necessarily associative, over an associative ring with identity. It is proved that the torsions form a complete distributive grid. The authors note that this same result was obtained in a recent paper (R. L. Snider, Pacific J. Math., 40, No 1, 1972, p 207) for the particular case of associative rings. They find that torsions, like radicals, are often specified by an indication of the corresponding radical or semiordinary class, and they develop two theorems which characterize radical and semiordinary classes. These theorems can be extended to cover much more general classes of algebraic systems, including Ω groups.

1/1

USSR

UDC 678.671.38.01.01.73

MACHULIS, A. N., MISEVICHYUS, P. P., ANDRIMAVICHUS, L. P., VEGDERAVY, E. I.,
and BERLIN, A. A.

"The Effect of Stabilization and Thermal Treatment on the Ablation of Phenol-
Formaldehyde Plastics"

Moscow, Plasticheskiye Massy, No 3, 1972, pp 53-56

Abstract: A study of the ablation stability and breakdown of phenol-formaldehyde plastics (PF) stabilized with polymers with a system of conjugated bonds (PC) was carried out. The effect of preliminary thermal treatment of a stabilized phenol-formaldehyde resin on its physical-mechanical and ablation properties was also investigated. The following stabilizers were used: polyphenylenes, polyphenylenequinone, polyethylenephylenequinone, polyphenyleneperoxyquinone, polyquinone dioxide, and a polymer of *n*-phenylenediamine and *iso*-dianiline benzidine. In general, the stabilized PF showed lower weight loss and fewer macrodefects of the structure than the nonstabilized one. The kinetics of ablation breakdown of both the stabilized and unstabilized PF, on the other hand, appeared to be identical. In an inert medium the ablation breakdown of PF is slower than in an oxidizing medium, but the effectiveness of stabilizer additives is also lower. Thermal treatment of stabilized PF is effective only to a small extent in increasing its ablation stability. The authors

USSR

MACHYULIS, A. N., et al., Plasticheskiye Massy, No 3, 1972, pp 53-56

stabilized with PCB. Higher temperatures lead to formation of cracks, weight loss and poorer physical-mechanical properties.

2/2

USSR

ANDRUS, T. I., BAZILENKO, O. K.

"Study of Single-Channel Queueing System with Blocking of Free Source"

Materialy Seminara po Kibernet. AN MoldSSR, Mold Territor. Gruppa Nats. Kom. SSSR po Avtomat. Upr. [Materials of Seminar on Cybernetics, Acad. Sci. MoldSSR, Moldavian Territorial Group of National Committee of USSR on Automatic Control], 1972, No 46, pp 24-41 (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract No 3 V71 by I. Kovalenko).

Translation: The functioning is studied of a queueing system with a finite number of sources of requests. There is an "accessibility interval," outside of which servicing of requests received from given sources is impossible. The author studies varieties of such a system, in the first of which each source sends only one request, while in the second each source sends several requests and in the third the reserve of requests is unlimited. The expediency is studied of dividing the interval of accessibility into subintervals with corresponding division of the set of sources of requests. The analytic prerequisites accepted by the author allow the system to be studied by the method of restoration processes.

1/1

USSR

UDC: 543.51

SHKURDODA, V. F., Candidate of Technical Sciences; SAMOBROD, V. V.,
ANDRUSENKO, A. A., and DOLYA, V. N., Engineers

"A Manufactured Monopolar Type MKh-7301 Spectrometer"

Moscow, Pribory i sistemy upravleniya, No 6, 1972, pp 42-43

Abstract: The Sumy Plant for Electronic Microscopes has designed a monopolar mass spectrometer, type MKh-7301, for mass production. N. N. Bagrov, A. A. Guslyakov, and A. G. Furmanskiy were the men primarily responsible for the design of the industrial version of this instrument, which was constructed for dealing with problems involving the analysis of residual gases in vacuum systems, gas separation and the determination of leakages in high vacuum, the efficiency of evacuation in systems, the control of residual gases in technical procedures such as vacuum sputtering of thin films, vacuum alloying, and the like. A block diagram and a photograph of the instrument are presented together with a list of its technical characteristics and a sample mass spectrograph of residual gases. The instrument itself is discussed and its theory explained. The device has both automatic and manual scanning, and its resolving power and mass range can be varied within certain limits.

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USSR

UDC 621.396.677

ALONINA, A. I., ANDRUSENKO, A. M., SIDORENKO, B. G.

"Lattice-Type Arrays on Dielectric Substrates"

Radiotekhnika. Resp. mezhved. temat. nauch.-tekhn. sb. (Radio Engineering. Republic Interdepartmental Thematic Scientific and Technical Collection), 1972, vyp. 20, pp 127-131 (from RZh-Radiotekhnika, No 6, Jun 72, Abstract No 6B35)

Translation: The method of direct summation of multiple reflections was used to obtain values of the reflection and transition coefficients in the form of infinite series for the structure comprising two lattice-type arrays each of which is arranged on a dielectric layer. The solution is correct for the case of the long-wave approximation (the period of each array is less than the wavelength), and the spacing between the dielectrics exceeds the distance at which the harmonics damp by e times. By using the previously developed procedure, the infinite series are contracted. The amplitude and polarization characteristics of the investigated structure were calculated on a computer as a function of the parameters of the structure. The results are presented in the form of graphs. There are 2 illustrations and a 4-entry bibliography.

1/1

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USSR

UDC: 535.818.9

ADONINA, A. I., ANDRUSENKO, A. M., and SLYUSARSKIY, V. A.

"Prism Polarizers"

Kiev, Izvestiya VUZ--Radioelektronika, Vol 14, No 1, 1971, pp 61-66

Abstract: In this paper, the authors consider the problem of the passage of an electromagnetic wave through a Dove [transliteration uncertain] prism or Fresnel rhombus with the multiple reflections taken into account. For the computations, they use the method of direct summation of the multiple reflections. The assumption is made that the cross section of the electromagnetic wave beam incident on the face of the prism or rhombus is much smaller than the area of that face. Dimensions of the device to be investigated are chosen such that the incident beam undergoes an integral number of reflections from the device's upper and lower bounds, with the beam in the Dove prism undergoing an odd number of reflections and the beam in the Fresnel rhombus undergoing an even number. The case in which the wave incident on the face of the device has a definite polarization is examined. Theoretical computations of the basic characteristics of elliptically polarized waves were made on an electronic computer.

1/1

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USSR

UDC: 621.371

ANDRUSEVICH, L. K., KARFOV, V. N., and SHEYNMAN, D. I.

"Apparatus for Investigating Amplitude Probability Distribution
and the Phase of Radio Signals Combined"

Moscow, Pribory i Tekhnika Eksperimenta, No. 3, 1971, pp 118-119

Abstract: A combined investigation of the fluctuations of phase and amplitude of short-wave signals in the ionosphere provides an insight to the physics of the signal fluctuations and permits estimating the potential noise immunity of phase-manipulated systems. The equipment described in this article for making such an investigation can obtain the conditional amplitude probability distributions and phase directly in the process of measurement. The block diagram of this apparatus is given, and its operation described. A separate block diagram of the phase fluctuation meter is also shown, together with a graph illustrating its operation. The authors express their gratitude to A. N. Shilovskiy for his assistance. They are associated with the Novosibirsk Electro-technical Institute.

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USSR

ANDRUSHAYTYS, G. P., Director, Institute of Biology, Academy of Sciences
Latvian SSR

"The Effect of Pesticides on the Environment"

Riga, Izvestiya Akademii Nauk Latviyskoy SSR, No 4, 1972, pp 44-49

Abstract: The use of DDT was prohibited in the Latvian SSR in 1966, i. e., earlier than in any other country of the world. At present apprehension is aroused by the accumulation of pesticides in bodies of water, including marine bodies such as the Baltic Sea. The toxicity of water to living beings (hydro-toxicology) is being subjected to study from this standpoint. Extensive studies in this field are being conducted at the Institute of Biology, Academy of Sciences Latvian SSR. The content of DDT and PTsB in fresh tissues and fat of flounder, herring, salmon, and cod from the Baltic Sea was determined. The action of 2,4-D on the metabolism of mitochondria isolated from fish liver was investigated. It was established that the mitochondria were sensitive to the action of this herbicide already in a concentration of 10^{-4} M and that complete dissociation of oxidative phosphorylation was produced by it in a concentration of $2-3 \times 10^{-3}$ M. As distinguished from dinitrophenol, 2,4-D suppressed not only oxidation associated with phosphorylation, but also free

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oxidation. 2,4-D produced swelling of mitochondria that could not be reversed by ATP or serum albumin. It was established that the action of 2,4-D on mitochondria was due to a breaking up of lipoprotein membranes and to the freeing of fatty acids from phospholipids. In cooperation with scientists at the Institute of Experimental Biology, Polish Academy of Sciences, the effect of 2,4-D on the consumption of O_2 by the plankton copepods *Sinocalanus vetulus* was studied. A microrespirometric procedure based on the principle of Cartesian floats was applied, which was developed by the Polish scientists and makes it possible to determine with a precision reaching 10^{-6} ml the use of O_2 by individual small animals. The respiration of *S. vetulus* was inhibited by 2,4-D beginning with a concentration of 2.5×10^{-3} M and then became stabilized at $7.5-15 \times 10^{-3}$ M because of the action of a compensating mechanism. It was also established that 2,4-D inhibits the embryogenesis of the fish *Misgurnus fossilis*. By using the method of Cartesian floats, the effect of 2,4-D on respiration in the early stages of embryogenesis of *M. fossilis* is being studied.

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1/2 036 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--TWO QUANTUM BENZOYL CHLORIDE PHOTSENSITIZED CROSSLINKING OF
POLYTHYLENE -U-
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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AT 22DEGREES AND 3 MM PARTIAL BZCL
PRESSURE POLYETHYLENE (I) FILM ABSORBS SIMILAR TO 0.2PERCENT BZCL IN 2-3
MIN. IRRADN. OF THIS FILM FOR 20 MIN GAVE SIMILAR TO 60PERCENT
CROSSLINKING. THIS REACTION IS 1.87 ORDER, WHICH INDICATES THAT 2 LIGHT
QUANTA PARTICIPATE. THE REACTION INVOLVES THE FORMATION OF PH AND CLCO
RADICALS WHICH ADD TO I, CROSSLINKING IT. FACILITY: INST. KHM.
VYSOKOMOL. SOEDIN., KIEV, USSR.

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Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

242504 VOLTAGE GENERATOR is useful in radio-electronic equipment for identification of targets, and for solving problems of determining the probability coefficients of accidental characteristics in data storage and identification systems. The proposed generator contains a non-linear element such as a varicond connected to the voltage through a condenser and the outlet busbar is connected to the common point of the varicond and load.

The non-linear varicond 1 is connected in series to the impedance of load 2. Through the resistor 3 a displacing voltage is led from source 4, while entry of the circuit is blocked by a direct current transformer.

11.12.67 as 1202999/18-24, B.YU. BYLYBENKO & F.I. ANDRUSHCHENKO (5.9.69) Bul 15/23.4.69. Class 42m⁴. Int.Cl.G 06g.

AUTHORS: Bulybenko, V. Yu.; Andrushchenko, F. I.

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